

Listing of Claims

This listing will replace all prior versions and listings of claims:

1-27. (Canceled)

28. (New) A method of processing a semiconductor wafer comprising:

- (a) providing the wafer to an electrofill station;
- (b) in the electrofill station, electroplating copper on the wafer to fill high aspect ratio features;
- (c) transferring the wafer to a second station; and
- (d) in the second station, at least partially electromechanically polishing or electroplanarizing the wafer.

29. (New) The method of claim 28, wherein the electrofill station employs an electrofill electrolyte and the second station employs a second electrolyte, and wherein the electrofill electrolyte and the second electrolyte have different compositions.

30. (new) The method of claim 28, wherein copper is electroplated on the wafer to at least partially fill low aspect ratio features not completely filled during electroplating in the electrofill station.

31. (new) The method of claim 30, wherein the copper is electroplated on the wafer to at least partially fill low aspect ratio features at a station other than the electrofill station.

32. (new) The method of claim 31, wherein the electrofill station includes an electrolyte comprising an additive.

33. (new) The method of claim 32, wherein the additive comprises a suppressor, an accelerator, or both.

34. (new) The method of claim 33, wherein the accelerator is selected from the group consisting of MPS, SPS, and DPS.

35. (new) The method of claim 32, wherein the station in which copper is electroplated on the wafer to at least partially fill low aspect ratio features includes an electrolyte containing little or no additives.

36. (new) The method of claim 28, wherein the method is performed in an apparatus comprising separate modules for electroplating and polishing or planarization.

37 (new) The method of claim 28, wherein the electromechanically polishing or electroplanarizing is performed sequentially using a plurality of stations

38. (new) The method of claim 28, further comprising performing metal chemical etching on the semiconductor wafer.

39. (new) The method of claim 28, further comprising wet etching the semiconductor wafer.

40. (new) The method of claim 28, further comprising etching on the semiconductor wafer to remove copper.

41. (New) A method of processing a semiconductor wafer comprising:

(a) providing the wafer to an electrofill station where copper is electroplated on the wafer to fill high aspect ratio features;

(b) providing the wafer to a second plating station where copper is electroplated on the wafer to cover low aspect ratio features not filled during electroplating in the electrofill station; and

(c) electromechanically polishing or electroplanarizing the wafer sequentially using a plurality of stations,

wherein (a) – (c) are performed in an apparatus comprising separate modules for electroplating and planarization.